

# Increased coordination of the EWA with other environmental water programs

- **Integration:** the making whole or complete by bringing together parts; or bringing parts in together into a whole; unifying.
- **Coordination:** harmonious adjustment or action; as of muscles in producing complex movements; bringing into the proper order; adjusting various parts so as to have harmonious action.
- **Communication:** a giving or exchange of information by talk, gestures, writing, etc.

USF&WS Presentation

EWA Technical Workshop

September 8, 2004

# Increased coordination of the EWA with other environmental water programs

Each program has:

- Separate and distinct purpose
- Separate authority and funding source
- Own set of priorities and constraints
- Distinct objectives on different streams and/or in the Delta

# Increased coordination of the EWA with other environmental water programs

Overview of the four environmental water programs in the Central Valley:

- CBDA Environmental Water Account (EWA)
- CVPIA Section 3406 (b)(2) water
- CVPIA Section 3406 (b)(3) Water Acquisition Program (WAP)
- CBDA-ERP Environmental Water Program (EWP)
- Coordination among the four programs
- Do additional opportunities exist for use of the EWA upstream?

## EWA

Larger systems with available water from willing sellers. Mostly Delta Actions.

## EWP

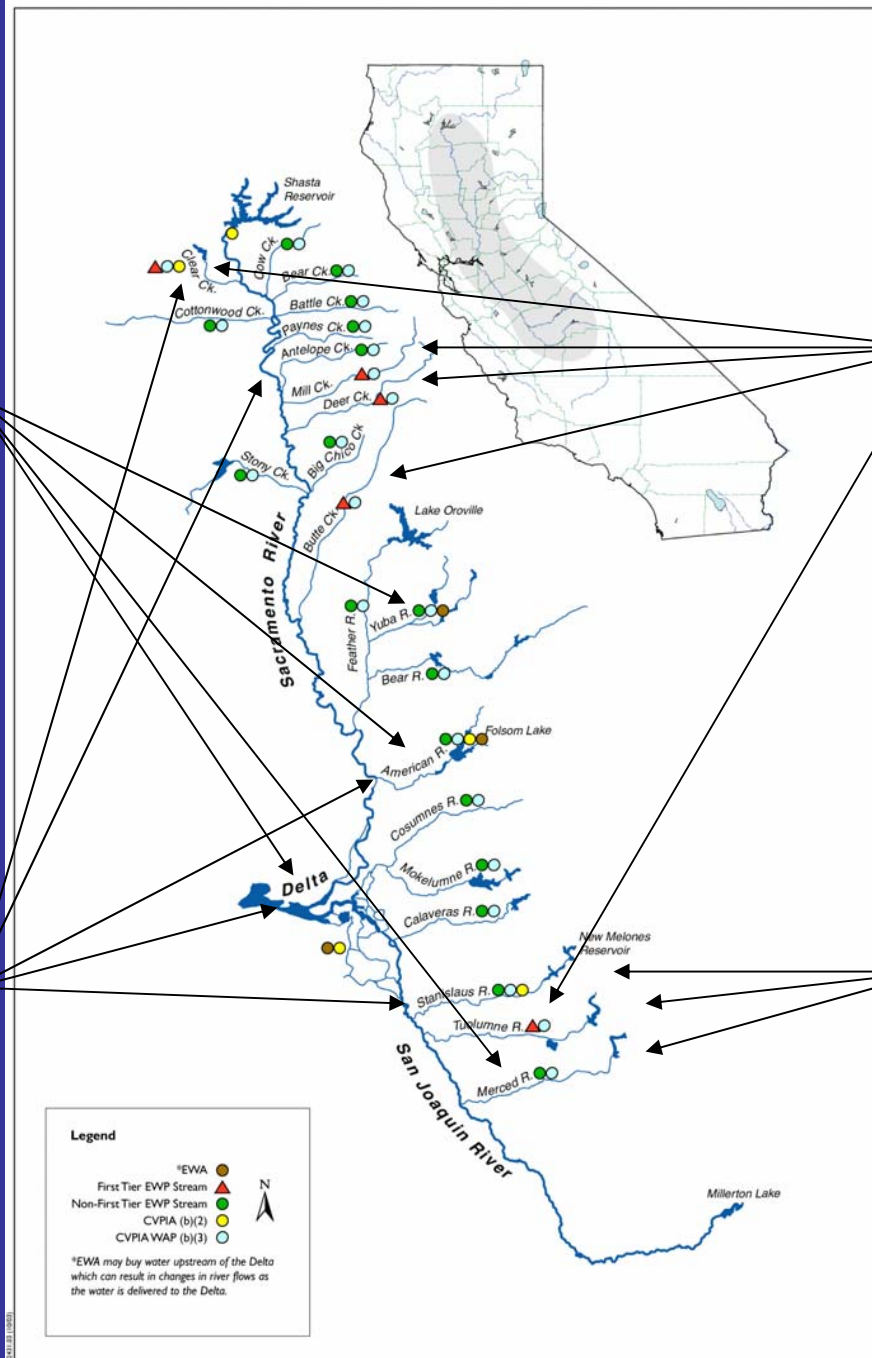
Smaller streams with at-risk species present. Tier 1 streams shown.

## B2 water

CVP controlled streams only. Upstream and Delta Actions.

## WAP

San Joaquin tributary augmentation in spring and fall.



## **WATER FOR FISH AND WILDLIFE RESOURCES**



**EWA  
Bay-Delta  
fish protection**



**EWP water for  
salmon restoration**

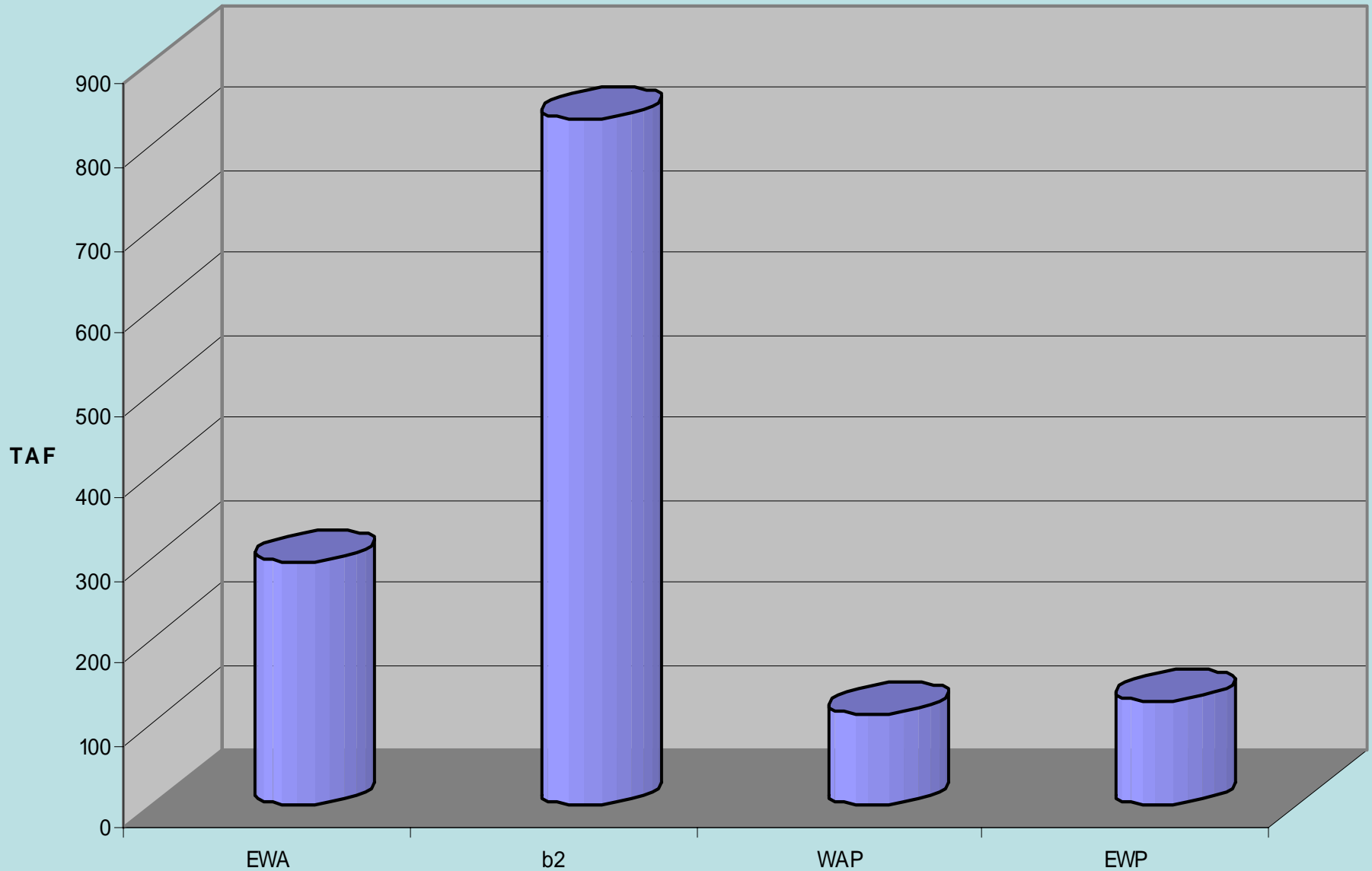


**3406(b)(2)  
Dedicate & Manage  
800,000 AF**



**3406(b)(3)  
Water acquisition  
for fish & wildlife**

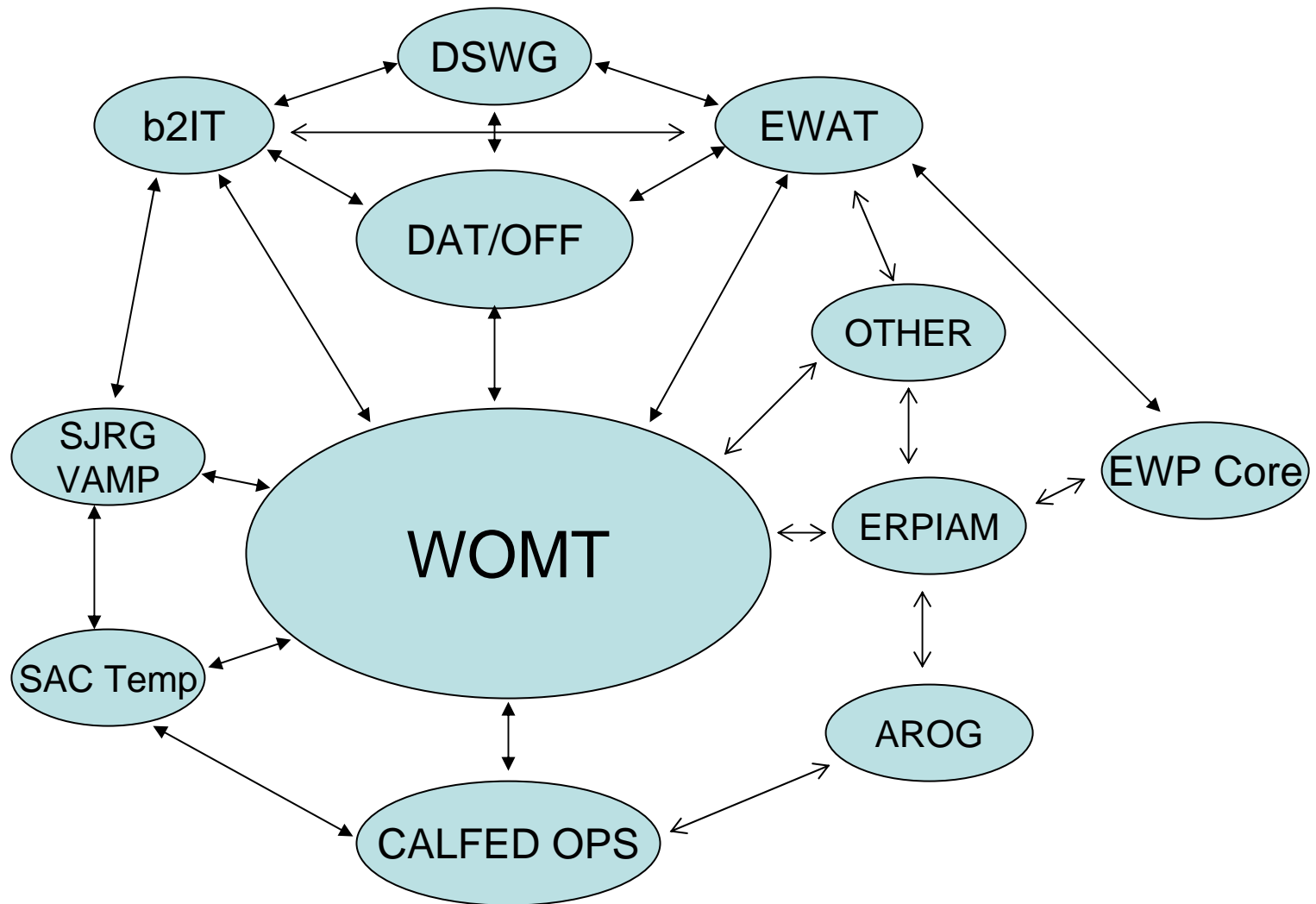
# Central Valley Environmental Water Programs



# **Increased coordination of the EWA with other environmental water programs**

- Purpose of each water program
- Authority and funding
- Implementing Agencies
- Technical basis
- Accomplishments (including quantity of water managed)
- Coordination (conceptual model)

# Increased coordination among environmental water programs/fish action decision process





# Environmental Water Account (EWA)

- **Purpose:** A cooperative CBDA program to provide protection to the fish of the Bay-Delta estuary beyond the regulatory baseline through environmentally beneficial changes in SWP/CVP operations at no uncompensated water cost to the project's water users.
- **Authority/funding:** CBDA has been funded directly from Proposition 204 and Proposition 50 funds. EWA purchases surface water and groundwater from willing sellers both north and south of the Delta.
- **EWA Agencies:** CDWR, CDFG, FWS, NOAA Fisheries, USBR

# Environmental Water Account (EWA)

## Technical basis:

- Published literature, CDFG reports, IEP investigations, etc.
- Three “Tiers” of assets, including Biological Opinions for delta smelt and listed salmonids
- Delta smelt (DSRAM) and salmon decision trees, based on real-time monitoring
- EWA fish actions are monitored, evaluated, and may be modified based on the best science available
- Annual external scientific reviews with EWA Technical Review Panel

# Environmental Water Account (EWA)

## Accomplishments:

- EWA fish actions have been implemented since 2001, and have been focused on Delta export curtailments to protect listed fish species and provide regulatory commitments.
- Three EWA transfers have been specifically timed to provide instream benefits to fish
- Since 2001 total EWA fish actions annually have ranged from approx 124,000 AF in 2004 to approx 348,000 AF in 2003.
- EWA funds were used to provide instream temperature benefits on the American River, by paying for lower river outlet releases in 2001 and 2002.

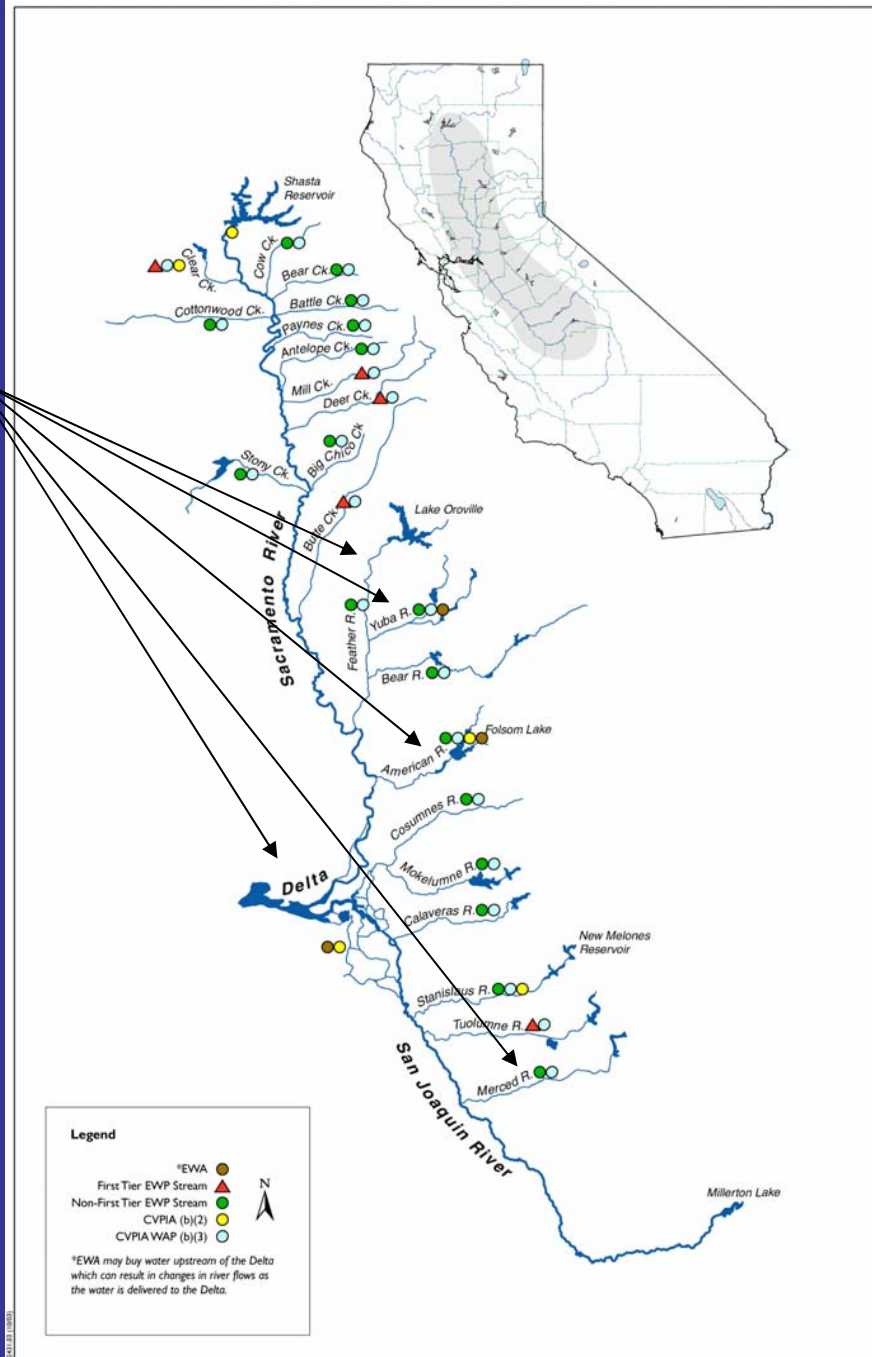
# Environmental Water Account (EWA)

## Coordination:

- Coordinated with WAP on Merced River in the fall of 2001, as well as San Joaquin tributaries when implementing VAMP
- Coordinated with (b)(2) releases on the American River
- Coordinated with SWP operations on the Feather River
- Weekly coordination through meetings of EWAT, B2IT, DAT, WOMT, and other interested parties

## EWA

Larger systems with  
available water from  
willing sellers.  
Mostly Delta  
Actions.



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# Section 3406 (b)(2) water

- **Purpose:** A CVPIA program that dedicates and manages 800,000 AF annually of CVP water for the primary purpose of fish, wildlife, and habitat restoration; to assist meeting the WQCP, and to help meet post-1992 ESA obligations.
- **Authority:** Authorized by CVPIA in 1992. (b)(2) water is managed pursuant to conditions specified by the USFWS after consultation with USBR and CDWR, and in cooperation with CDFG.
- **(b)(2) Agencies:** FWS and USBR, in coordination with CDFG, CDWR, and NOAA fisheries.

# Section 3406 (b)(2) water

## Technical basis:

- The rationale and scientific basis for (b)(2) actions is based on AFRP documents, published literature, and IEP and DFG reports.
- CVPIA's mandate to double natural production of anadromous fish.
- CVPIA's instructions to "...provide flows suitable quality, quantity, and timing to protect all life stages of anadromous fish..."
- (b)(2) fish actions are monitored, evaluated, and modified based on the best available science.

# Section 3406 (b)(2) water

## Technical basis:

### AFRP Summary of flow-related limiting factors

- Inadequate timing and/or magnitude of flow to provide suitable conditions for one or more life stages.
- Water temperatures that exceed tolerances of one or more life stage
- Direct and indirect impacts of CVP and SWP Delta pumping



# Section 3406 (b)(2) water

## Technical basis:

### AFRP (b)(2) flow-related habitat objectives

- Improve flows in CVP-controlled streams using (b)(2) water
- Clear Creek (year round)
- Sacramento River (Oct – Apr 15)
- American River (Oct – May)
- Stanislaus River (Oct – June)
- Protect fish and improve habitat conditions in the Delta by closing DCC gates and reducing CVP exports (Nov – June)

# Section 3406 (b)(2) water

- In spring 1993, Interior began implementing (b)(2) fish actions.
- In November 1997, Interior released it's Final Administrative Proposal on the Management of (b)(2) water.
- In October 1999, Interior released it's (b)(2) Decision which described (b)(2) accounting procedures.
- In 2001 and 2002, several Federal District Court decisions resulted in a reduced amount of (b)(2) water available for restoration fish actions.
- In May 2003, Interior released it's Revised (b)(2) Decision
- In June 2003 and January 2004, the Ninth Circuit Court of Appeals ruled that Interior shall give effect to the hierarchy of purposes when implementing (b)(2) fish actions.

# B2 Water Use Accomplishments

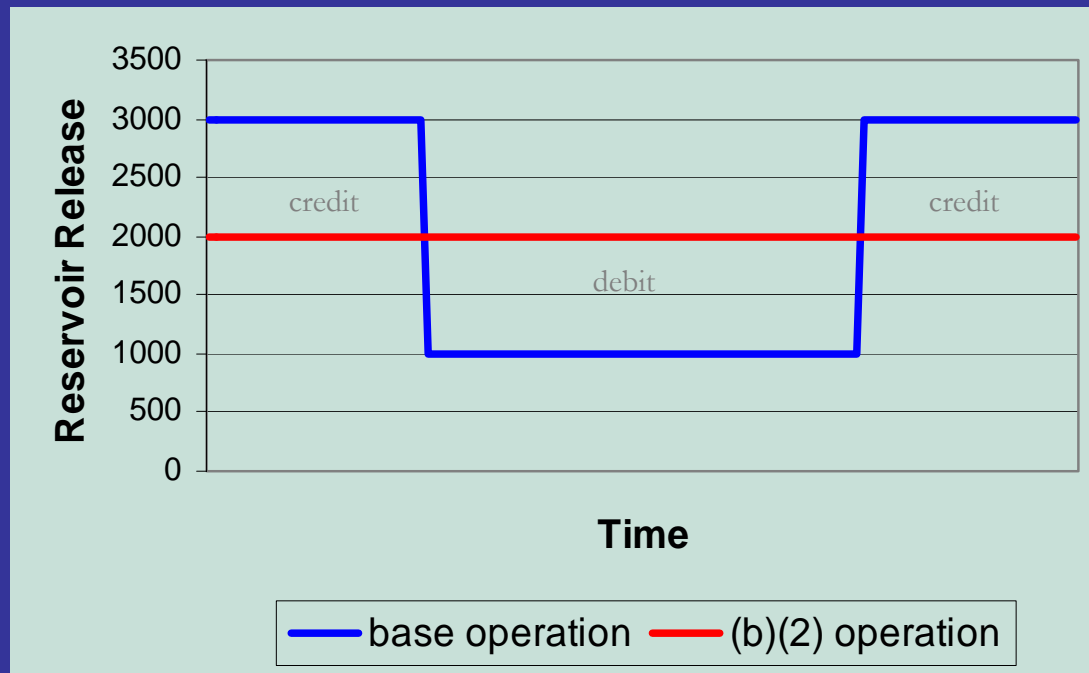
Water Years	Upstream Flow Augmentation <sup>1</sup>	Export Curtailments <sup>2</sup>
2000 – 2001	~ 348 TAF	~ 451 TAF
<div> <div></div> <div>B2 Accounting Metrics Changed Due to District Court Decisions</div> <div></div> </div>		
2002 - 2003	~385 <sup>3</sup> TAF	~ 410 <sup>3</sup> TAF

<sup>1</sup> Accomplishment is actually providing improved habitat in terms of quantity and quality (temperature).

<sup>2</sup> Accomplishment is actually reduction in entrainment/take.

<sup>3</sup> Although numerically similar to previous years, frequency and magnitude of fish actions were reduced.

# B2 Water Use Accomplishments – Illustration of B2 Accounting Changes' Effects



- In 2000-2001, no (b)(2) was used (debits & credits balanced).
- In 2002-2003, (b)(2) used (debits only, no credits)

# Section 3406 (b)(2) water

## Accomplishments:

Upstream releases include:

- Releases made to augment flows for salmon or steelhead
- Releases made to improve instream temperatures
- Releases made to reduce flow fluctuations resulting from changes in project operations or flood control releases (to minimize redd dewatering or juvenile stranding)
- Releases made to help meet WQCP requirements for X2 location, Delta outflow, or to offset the water quality impacts of closing the DCC.

# Section 3406 (b)(2) water

## Accomplishments:

Delta export curtailments include:

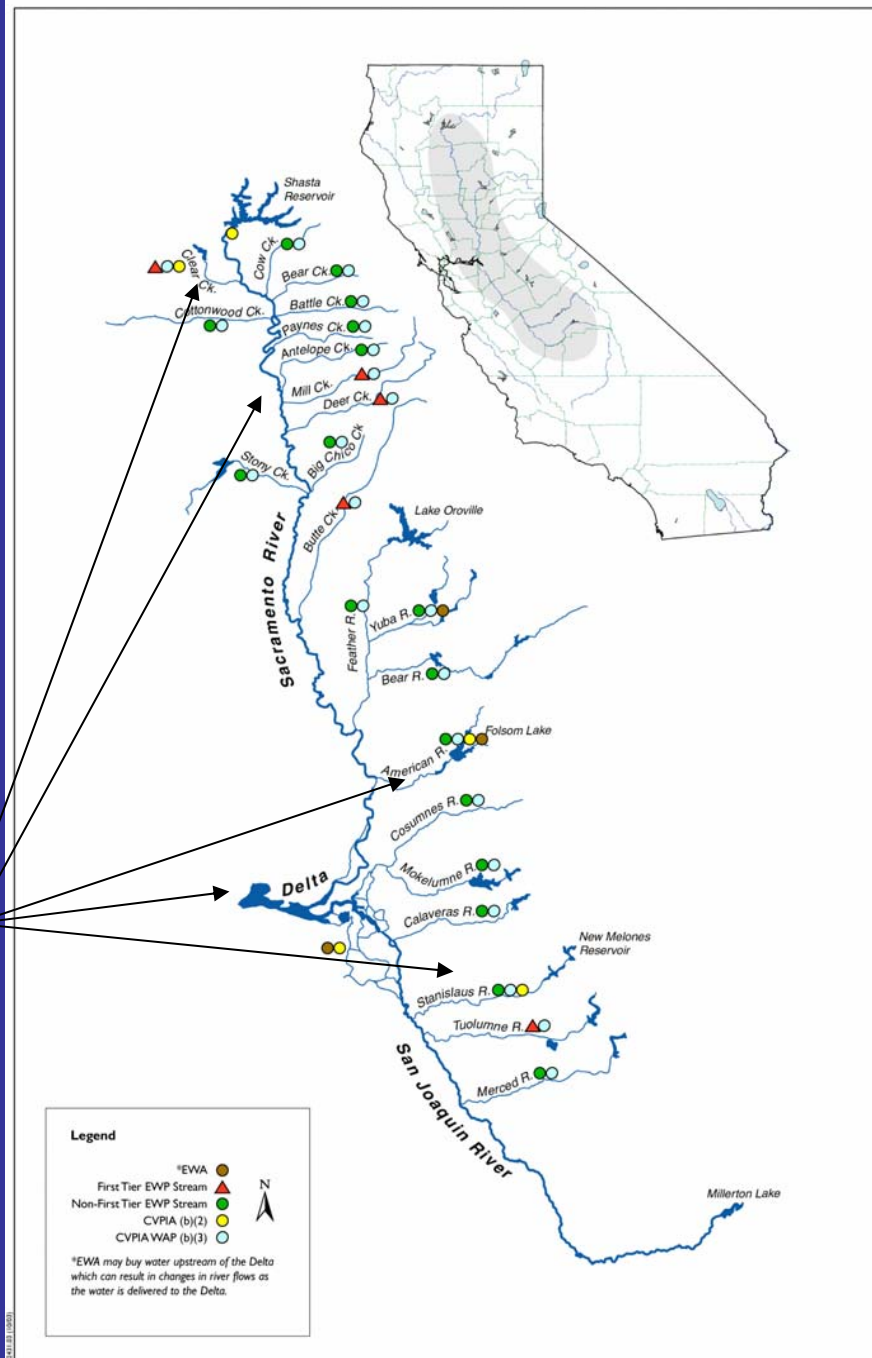
- Export cuts to protect fish when they are near the pumps—specifically chinook salmon, steelhead, and Delta smelt.
- Export cuts to help meet the X2 requirements of the WQCP
- Export cuts to help meet the export/inflow ratio in the WQCP
- Export cuts to help meet Delta salinity requirements in the WQCP when the DCC is closed for fish protection

# Section 3406 (b)(2) water

## Coordination:

- Coordinated with EWA releases on American River
- Coordinated with WAP on the Stanislaus River in the fall, as well as the San Joaquin tributaries during VAMP
- Coordinated with CVP operations on the Sacramento, American, Stanislaus Rivers, Clear Creek, and the Tracy pumping plant
- Weekly coordination through meetings of B2IT, EWAT, DAT, WOMT, and other interested parties
- Potential coordination with EWP on Clear Creek

B2 water  
CVP controlled  
streams only.  
Upstream and Delta  
Actions.





# Section 3406 (b)(3)

## Water Acquisition Program (WAP)

- **Purpose:** A CVPIA program intended to acquire water to supplement (b)(2) and to acquire water for wildlife refuges (which we won't be discussing today). Water acquisitions for streamflow augmentation are consistent with the AFRP flow objectives.
- **Authority/funding:** CVPIA authorized the Restoration Fund for this and other CVPIA actions.
- **WAP Agencies:** FWS and USBR, in coordination with CDFG, CDWR, and NOAA fisheries.

# **Section 3406 (b)(3)**

## **Water Acquisition Program (WAP)**

### **Technical basis:**

- The rationale and scientific basis for (b)(3) actions is based on AFRP documents, published literature, and IEP and DFG reports.
- CVPIA's mandate to double natural production of anadromous fish.
- CVPIA's instructions to "...provide flows suitable quality, quantity, and timing to protect all life stages of anadromous fish..."
- WAP fish actions are monitored and evaluated (e.g., VAMP)

## Section 3406 (b)(3)

### Water Acquisition Program (WAP) Technical Basis

# Doubling Goals and 1996 Guidelines for Allocation of Acquired Water

3-Xa-2

WORKING PAPER

Table 3-Xa-1. Escapement, harvest, and restoration goals for chinook salmon.

Race and river*	Escapement	Instre
All races combined	280,000	58
Fall run	220,000	40
Late fall run	15,000	
Winter run	23,000	
Spring run	13,000	
Sacramento River		
Fall run	77,000	
Late fall run	14,000	
Winter run	23,000	
Spring run	11,000	
Clear Creek	1,600	
Cow Creek	1,400	
Cottonwood Creek	1,600	
Battle Creek		
Fall run	18,000	
Late fall run	1,000	
Paynes Creek	90	
Antelope Creek	190	
Mill Creek		
Fall run	1,100	
Spring run	800	
Deer Creek		
Fall run	410	
Spring run	1,300	
Miscellaneous creeks	300	
Butte Creek		
Fall run	420	
Spring run	360	
Big Chico Creek	240	
Feather River	49,000	
Yuba River	13,000	

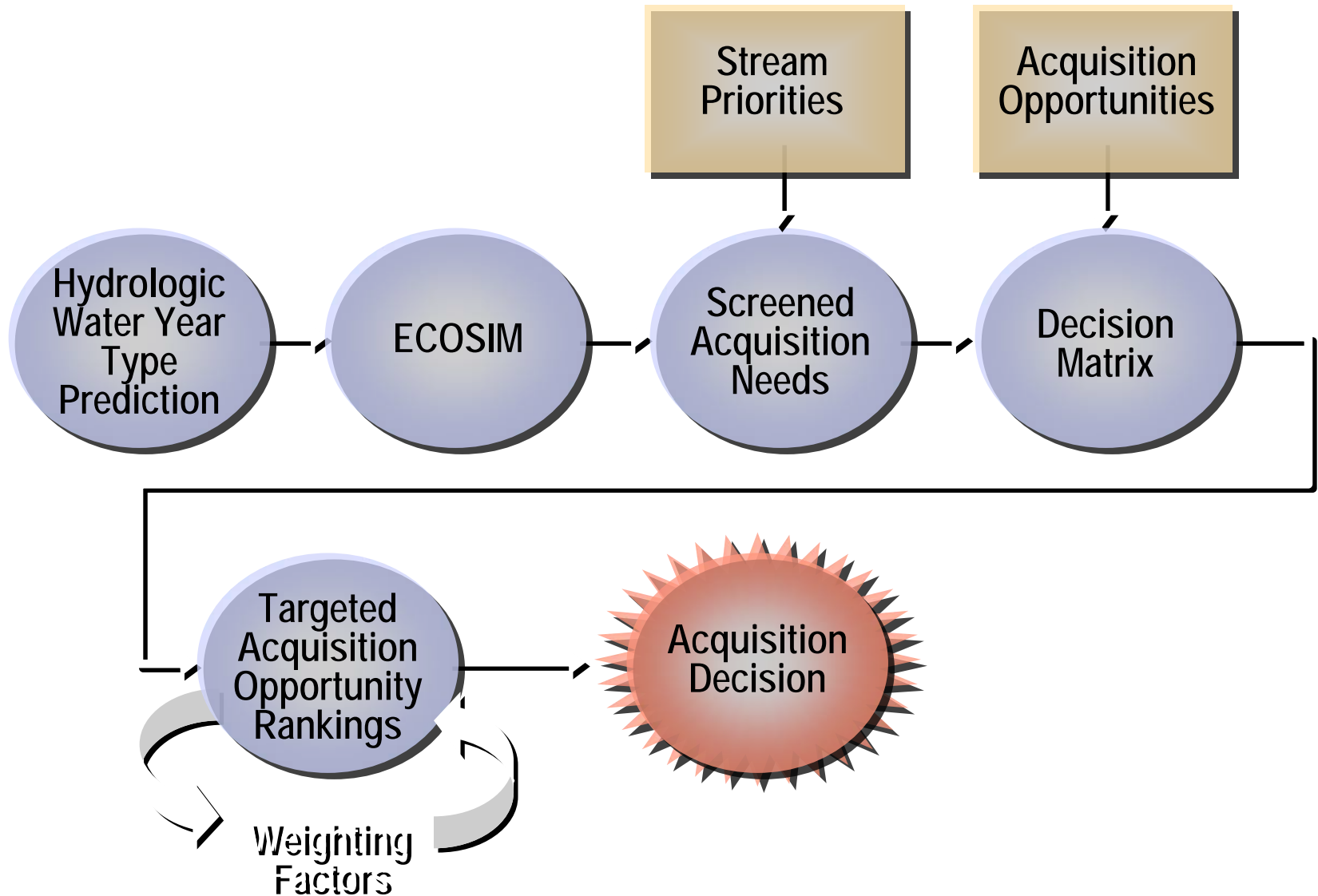
## Draft Guidelines for Allocation of Water Acquired Pursuant to Section 3406 (b)(3) of the Central Valley Project Improvement Act

A Tool for Use in Developing an Implementation Plan for the Water Acquisition Program and in Developing a New Alternative for the Programmatic Environmental Impact Statement



Prepared for distribution at a public workshop  
by the Anadromous Fish Restoration Program of the  
United States Fish and Wildlife Service.

# Decision support system for water acquisition



# **Section 3406 (b)(3)**

## **Water Acquisition Program (WAP)**

### **Technical Basis:**

#### **Water management and water acquisition Decision Support Model (DSM)**

- DSM integrates hydrology, biology, and economic data with policy to support water acquisition decisions to meet anadromous fish water needs
- DSM focuses on the value to anadromous fish by producing four alternative approaches on 19 streams, with relative rankings totaling 76 alternatives
- Strategy and Plan, and DSM Draft will be presented to the public at the end of this year
- We are also developing Water Appraisal Technical Guidelines that will be completed by the end of this year

# **Section 3406 (b)(3)**

## **Water Acquisition Program (WAP)**

### **Accomplishments:**

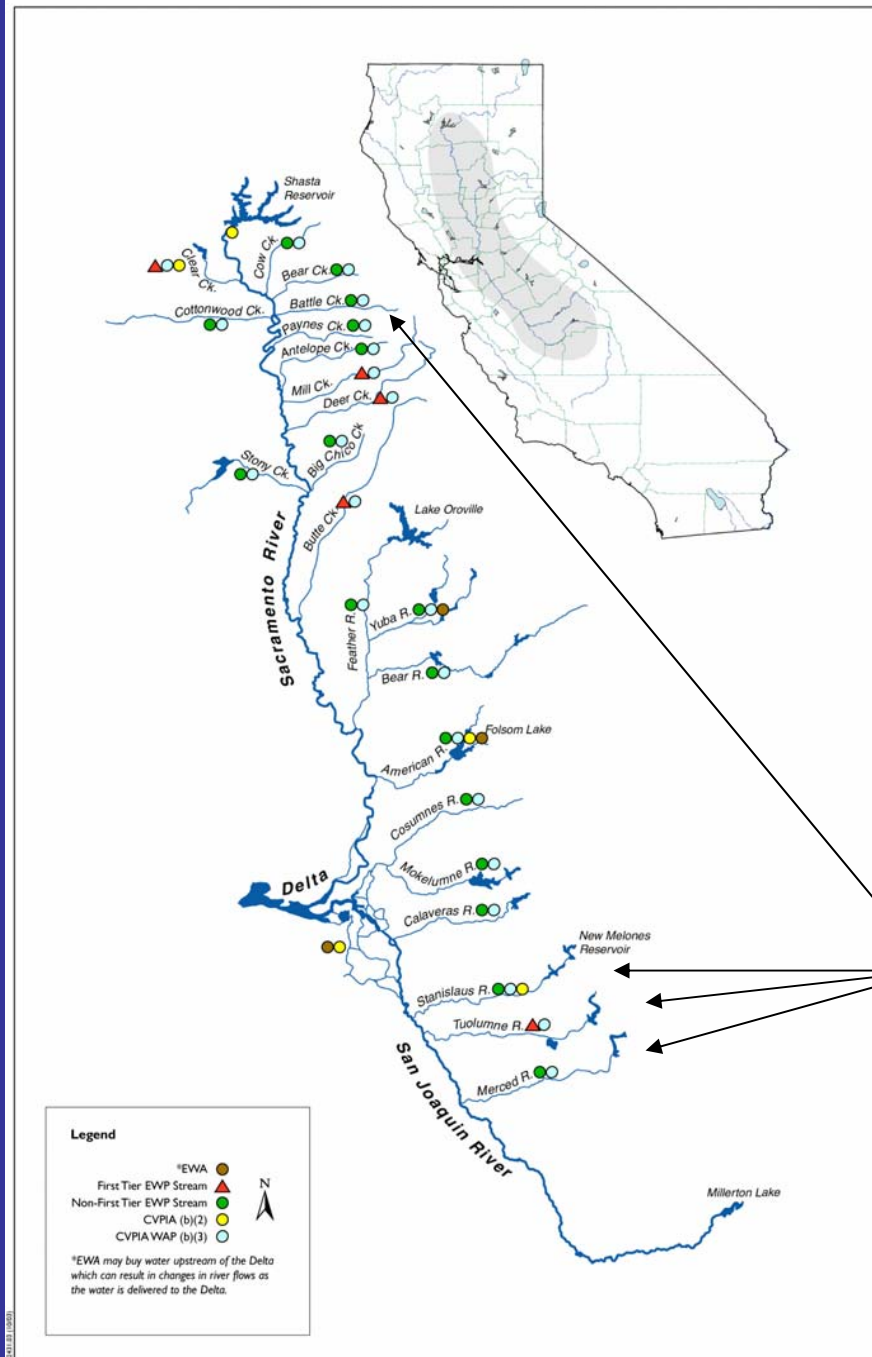
- Supports the San Joaquin Tributaries Agreement by guaranteeing flows for the Vernalis Adaptive Management Plan (VAMP) April 15 – May 15. These additional flows have averaged 77,000 AF/year.
- Annually purchases 15,000 AF from Stanislaus River and 12,500 AF from Merced River each October for adult chinook upstream migration flows.
- From 1994 to 1999 (pre-Tributaries Agreement) purchased approx 314,000 AF of water on the Merced and Stanislaus Rivers.
- On Battle Creek, WAP also paid for foregone power generation from 1997 through 2001 (approximately 87,000 AF of additional instream flow).

# **Section 3406 (b)(3)**

## **Water Acquisition Program (WAP)**

### **Coordination:**

- Coordination with EWA releases on Merced River in 2001
- Coordination with EWA and (b)(2) during VAMP
- Coordination with (b)(2) and CVP operations on the Stanislaus River
- Coordination through meetings of B2IT, SJRG, VAMP, WOMT, and other interested parties
- Coordination with EWP
- Coordination with Level 4 Refuge water supply



WAP  
San Joaquin  
tributary  
augmentation in  
spring and fall,  
and Battle Cr.  
foregone  
power.



# Environmental Water Program (EWP)

## Purpose

- A CBDA program focused on acquiring water from willing sellers on streams tributary to the Sacramento and San Joaquin systems to assist in carrying out the flow related goals of the Ecosystem Restoration Program (ERP).

### Objectives:

- To improve salmon spawning and juvenile survival
- To restore critical instream and channel-forming flows
- To provide flows and habitat conditions for fish protection and recovery

**Authority/funding:** CBDA program funded through ERP

**ERP Implementing Agencies:** USFWS, CDFG, NOAA Fisheries, coordinated with CDWR and USBR as needed

# Environmental Water Program (EWP)

## Technical Basis:

All actions designed to test hypotheses regarding water management in a manner that:

- Facilitates learning through adaptive management
- Includes appropriate monitoring
- Will be peer reviewed by an external scientific panel prior to approval

# Environmental Water Program (EWP)

EWP currently working on priority tributaries to develop locally supported objectives and proposals for increased flows.

## **Tier 1 streams:**

1. Clear Creek
2. Mill Creek
3. Deer Creek
4. Butte Creek
5. Tuolumne River

# Environmental Water Program (EWP)

## Tier 2 streams:

1. Battle Creek
2. Big Chico Creek
3. Calaveras River
4. Stanislaus River
5. Yuba River

## Tier 3 streams:

1. Antelope Creek
2. Cow Creek

# **Environmental Water Program (EWP)**

## **Accomplishments**

### **Clear Creek**

- Medium high flows to reinitiate geomorphic processes .
- Conceptual proposal reviewed by external scientists and related program staff.
- To Selection Panel in early Nov.

### **Deer Creek**

- Combine WUE, Groundwater Exchange and Leasing.
- Developing a WUE grant proposal and agreements.

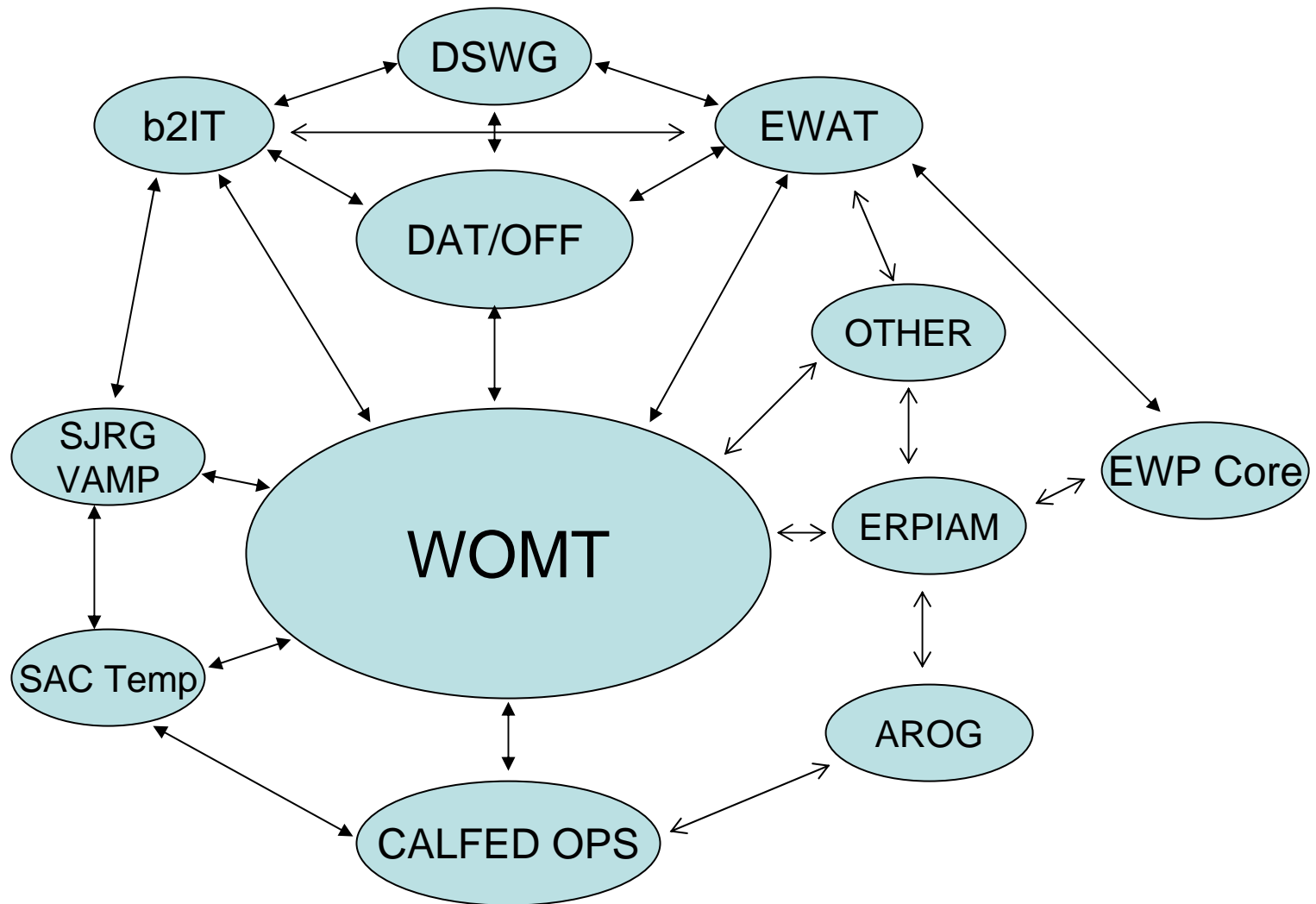
# Environmental Water Program (EWP)

## Coordination:

- Outreach and coordination with EWAT, B2IT and WAP.
- ERPIAMs, Restoration Subcommittee, ERP Science Board
- EWP Core Team – FWS, DFG, NOAA-F, meets with BOR, DWR(EWAT), and other interested parties
- Related Program Review of Proposals.
- Increase EWP participation in coordination teams as the program develops.



# Increased coordination among environmental water programs/fish action decision process





## **WATER FOR FISH AND WILDLIFE RESOURCES**



**EWA  
Bay-Delta  
fish protection**



**EWP water for  
salmon restoration**



**3406(b)(2)  
Dedicate & Manage  
800,000 AF**



**3406(b)(3)  
Water acquisition  
for fish & wildlife**

# Increased coordination of the EWA with other environmental water programs

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# Increased coordination of the EWA with other environmental water programs

- Pursuant to CALFED Record of Decision, (b)(2) and (b)(3) WAP are Tier 1 assets:

*Tier 1 definition: Baseline level of protection provided by existing regulation and operational flexibility; includes the biological opinions on Winter-run salmon and delta smelt, 1995 WQCP, and 800 TAF of (b)(2) water).*

- Pursuant to CALFED Record of Decision EWA and EWP are Tier 2 assets:

*Tier 2 definition: Assets in the EWA combined with the benefits of the ERP.”*

- For these reasons we focus on coordination and communication

EWA

Larger systems with available water from willing sellers.  
Mostly Delta Actions.

EWP

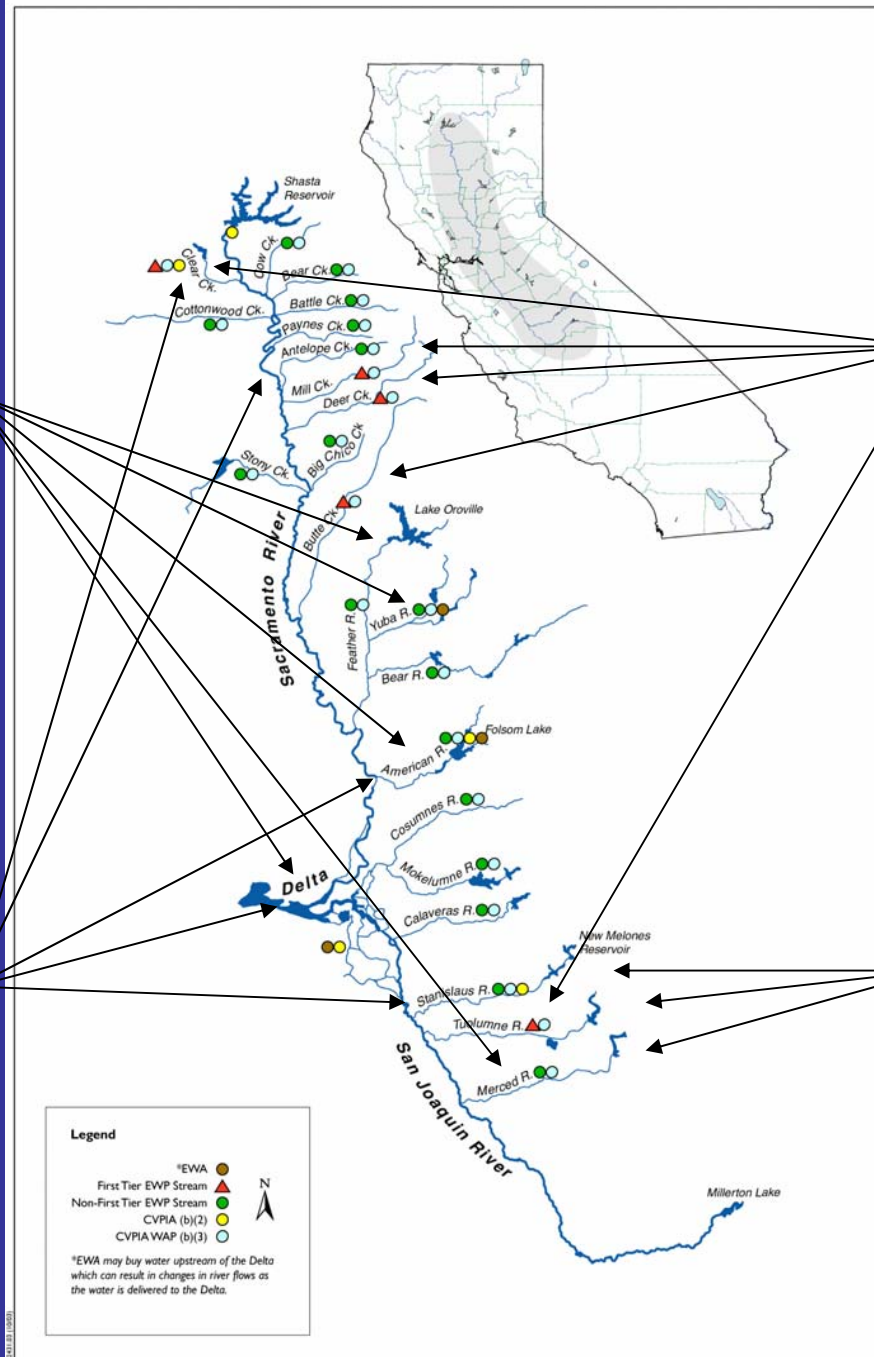
Smaller streams with at-risk species present. Tier 1 streams shown.

## B2 water

CVP controlled  
streams only.  
Upstream and Delta  
Actions.

## WAP

San Joaquin  
tributary  
augmentation in  
spring and fall.



# Do additional opportunities exist to use EWA assets upstream of the Delta?

## **Considerations:**

- Fish flow needs on each stream
- Other environmental water programs already being implemented on each stream
- Is additional water needed
- Coordination opportunities with EWP, WAP, and (b)(2

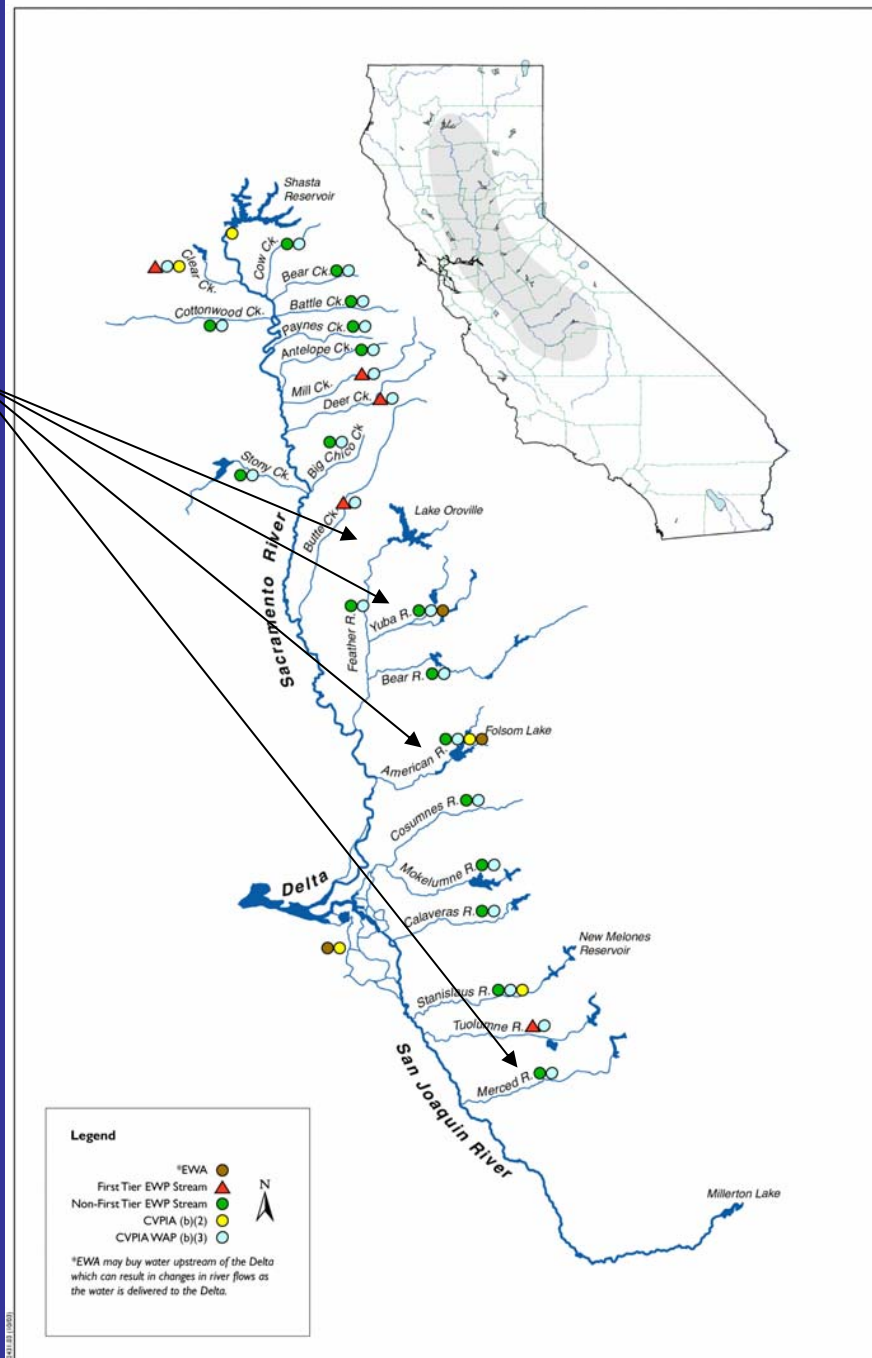
# Do additional opportunities exist to use EWA assets upstream of the Delta?

## **Considerations:**

- Are there willing sellers on the stream and how much water is available
- Can the water be released on a schedule that provides instream benefits for fish and also be exported into San Luis Reservoir
- Delta inflow, project demands, balanced vs excess conditions, DOI, and E/I standard
- Status of EWA resources/budget

**Each coordination opportunity is unique**

Streams where  
EWA has been  
active to date.



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# Acknowledgements

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